

POSITION SENSING METHOD AND APPARATUS FOR  
SYNCHRONOUS MOTOR GENERATOR SYSTEM

ABSTRACT

A position sensing apparatus (300) derives rotor position of a  
5 synchronous machine (200) from signals output from the machine (200).  
In one embodiment, the position sensing apparatus (300) comprises: a  
bandpass filter (322) that filters phase voltage signals output from main  
stator windings (216) of the synchronous machine (200) during AC  
excitation, thereby extracting a rotor position-indicating component from  
10 the phase voltage signals; a converter (324) that converts the filtered  
phase voltages into balanced two-phase quadrature signals, the balanced  
two-phase quadrature signals indicating positioning of the rotor (212); and  
an excitation controller (204) for controlling AC excitation frequency as a  
function of rotor speed.

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